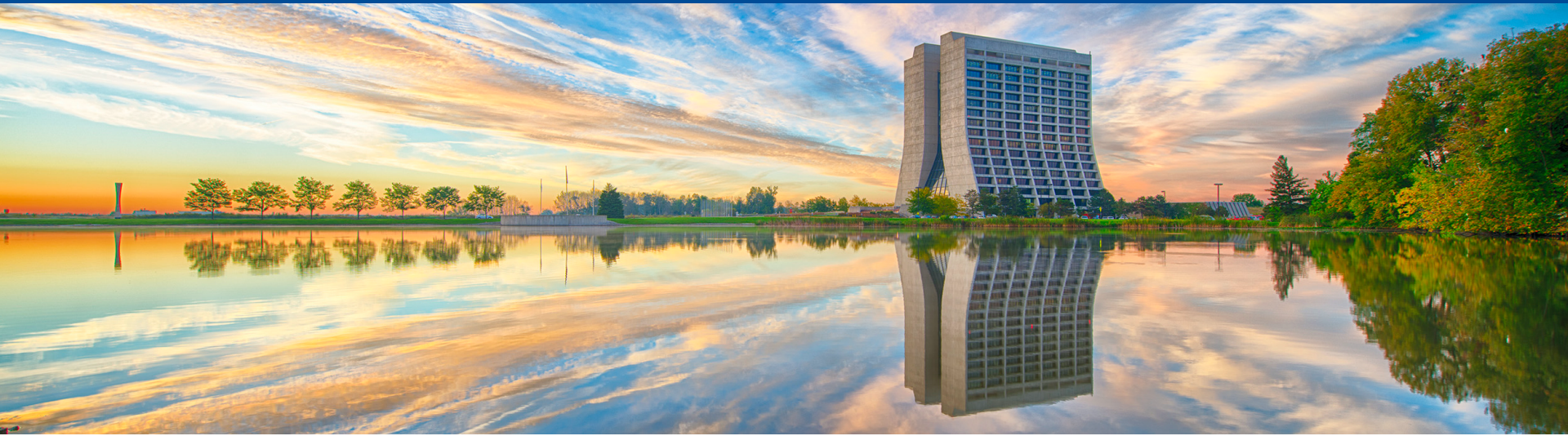

art news

26 May 2020

art stakeholders meeting

art 3.06 status

- Timescale (a few weeks)
- Drop Python 2 and SLF6 support
- Drop macOS support
- Split `fhiclcpp` into `fhiclcpp` and `fhiclpy`
- Various minor features and bug fixes
- GCC 9.3 (e20)
- Product stack refresh

Product	*art* 3.05	*art* 3.06
boost	1.70	1.73
root	*6.18/04d*	*6.20/04a*
range	3.0.4	3.0.10
python	*3.7.2*	*3.8.3*
tbb	2019.3	2020.2a
…		

Unexpected API change from TBB

- TBB is the library used by *art* (and other frameworks) to implement multi-threading.
- TBB has decided to deprecate the explicit `tbb::task` interface that *art* uses.
- This change has affected various HEP experiments, and it has triggered an HSF discussion regarding steps going forward.
- CMSSW is exploring whether the TBB-encouraged interface is adequate.
- Any solution for CMSSW will likely be a solution for *art*.
- No immediate discontinuation of the tasking interface is expected.
- The *art* developers will work to insulate users from this deprecation as much as practicable.

Trigger-path specification

- Should the following be an error?

```
physics: {
  a: [...]
  trigger_paths: [a, a]  // Repeated ‘a’
}
```

- Current behavior is to ignore duplicates without warning.

- **General guidance: do not specify ‘trigger_paths’ unless you need to**
  - Enable only a subset of specified trigger paths
  - Assign a specific trigger bit number to a given path (allowed as of *art* 3.06)

C++20

- C++20 has been finalized.
  - Draft International Standard out for ISO approval
- The 4 main core features:
  - Concepts
  - Coroutines
  - Modules
  - Ranges
- STL additions:
  - format library
  - `std::span`
  - `std::source_location`
  - `constexpr std::string/std::vector`
- Current compiler status for C++20 can be found:
  - GCC: https://gcc.gnu.org/projects/cxx-status.html#cxx2a
  - Clang: https://clang.llvm.org/cxx_status.html#cxx20
- GCC 10.1 is available on SciSoft
  - e21 experimental qualifier is available (`-std=c++2a`)